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01/24/02

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TITLE	OTHER AUTHORS
The DSN View Periods for a Mission	Kevin Kim

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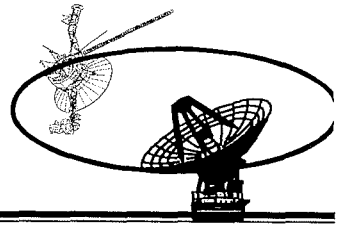
THE DSN VIEWPERIODS USED FOR A MISSION

AAS 02-221

A Space Flight Mechanics Me

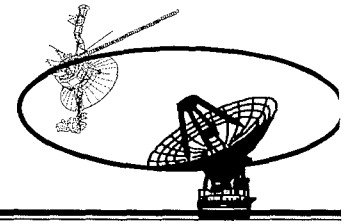
an Antonio, Texas

M. Kekybaum — Propulsion Laboratory — 30 J



PRESENTATION

- Why Look At The Viewperiods
- Viewperiod Definition
- What Viewperiods Are Used For
- Different Levels of Viewperiods Used

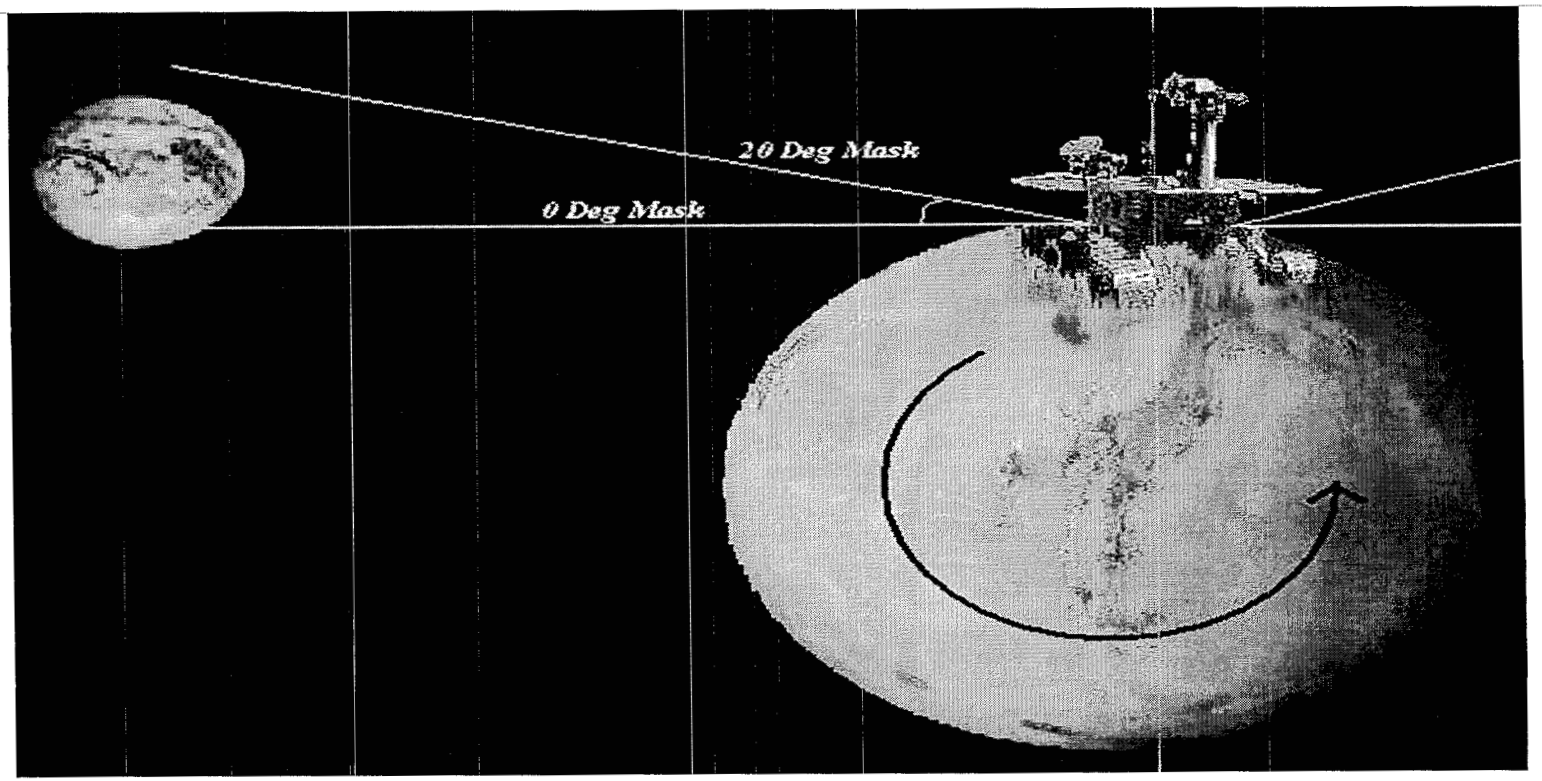


Why Look At Viewperiods

The Viewperiods provide the basis for the times that can be used as communication windows between the Deep Space Network (DSN) and the spacecraft (or object under investigation)

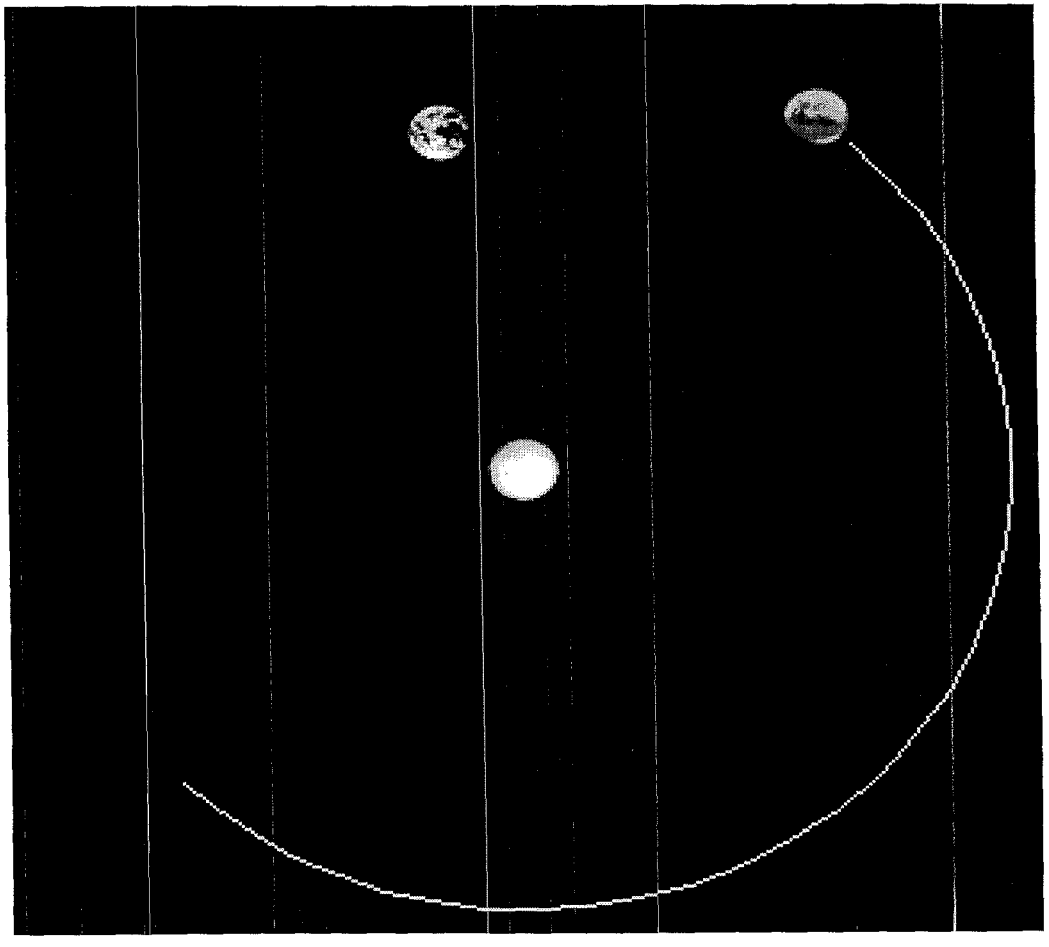
Viewperiod Definition

A Viewperiod is the "period" of time that the spacecraft is in "view"

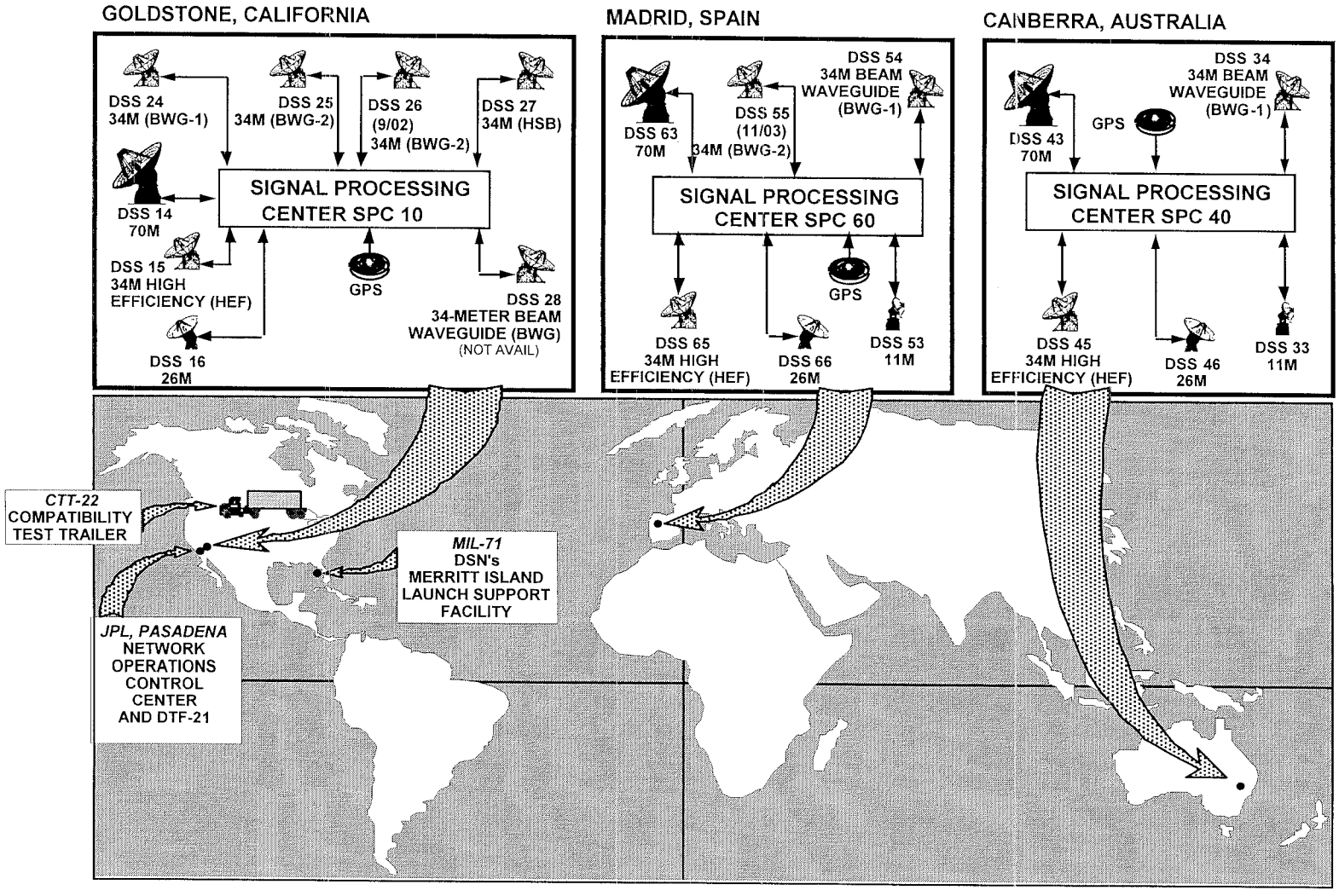


Viewperiod Definition

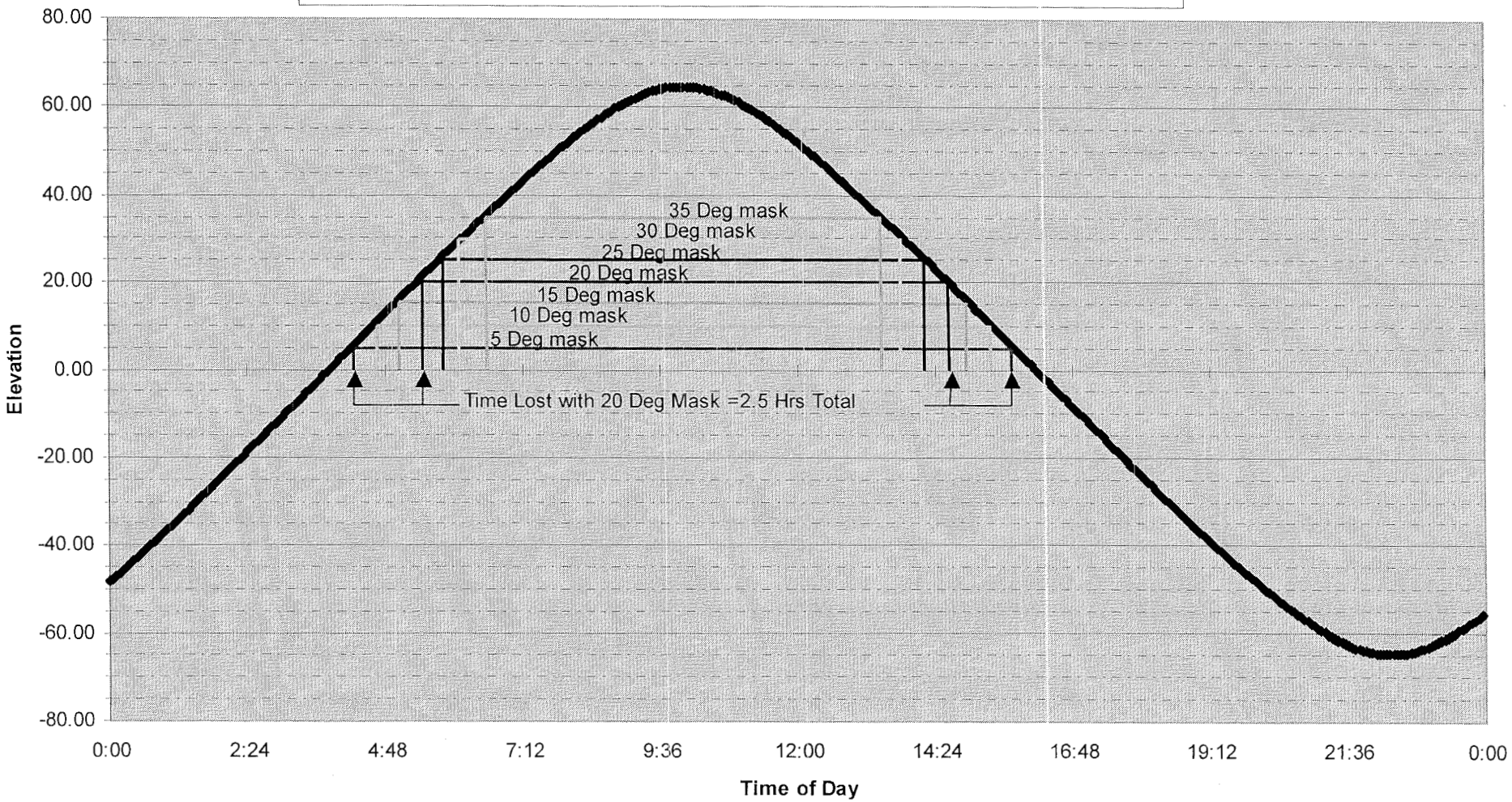
This depends upon the time of the day and the geometry involved.



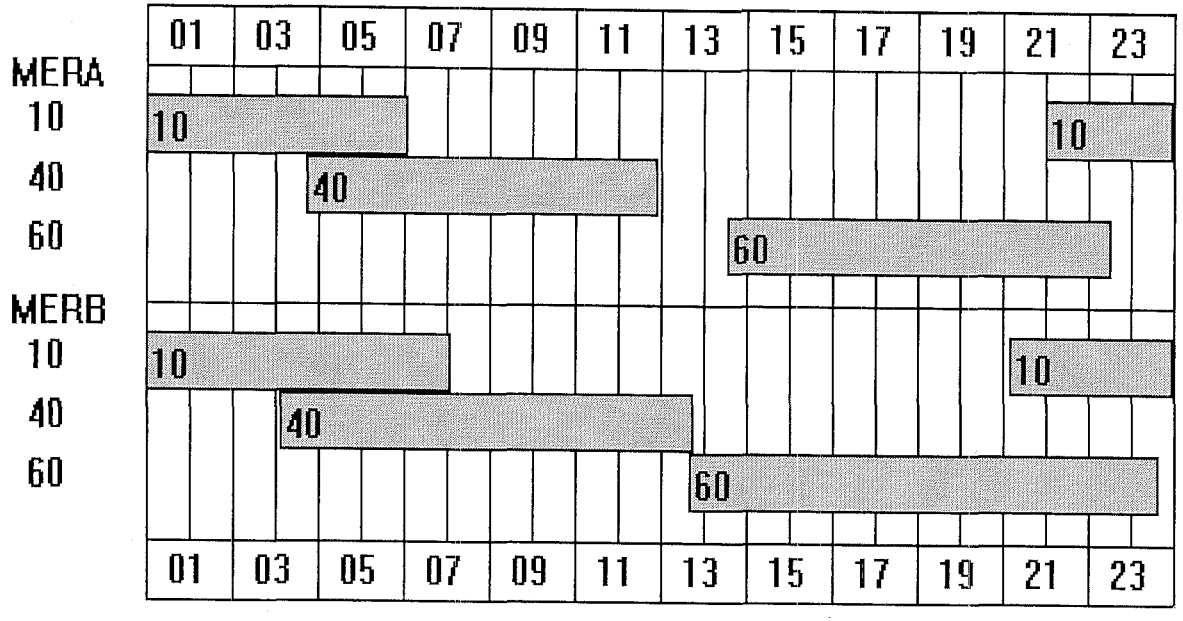
DSN Tracking Sites



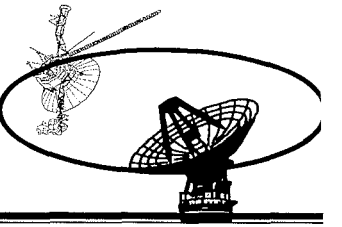
Viewperiods Depend upon Elevation Mask



Viewperiods

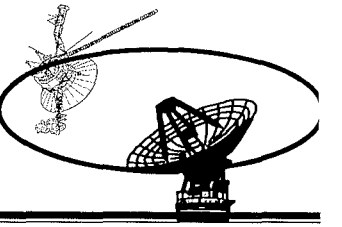


	Rise	Set	Duration
MERA 10	2100	0609	09:09
MERA 40	0346	1158	08:12
MERA 60	1334	2234	09:00
MERB 10	2011	0710	10:59
MERB 40	0308	1249	09:41
MERB 60	1240	2341	11:01



What Viewperiods are used for

- Loading Studies
- Forecasting
- Scheduling DSN Tracking time



Different Levels of Viewperiods Used

Forecasting

Project

Mid-Range

NSS

Forecasting Viewperiods

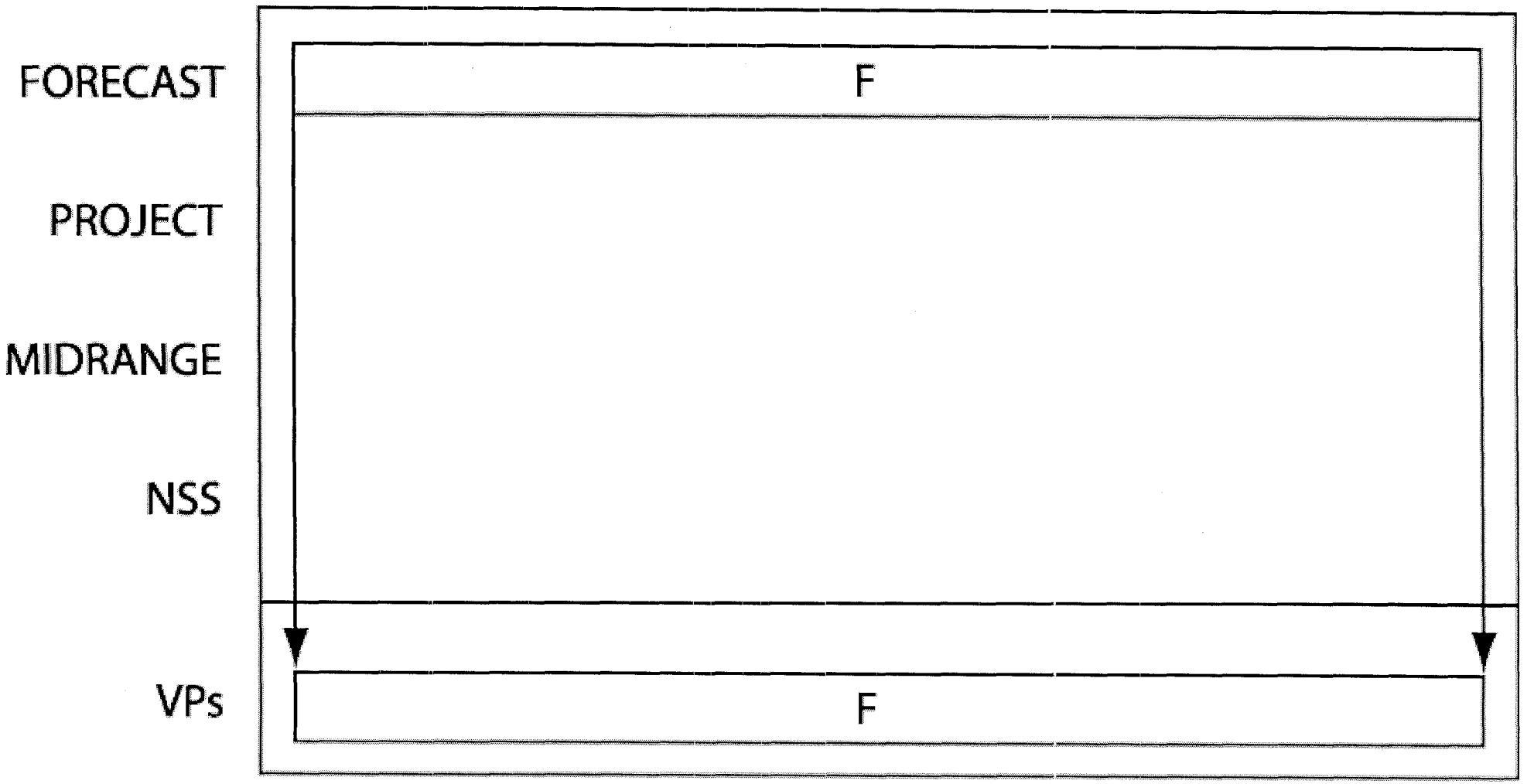


Figure 4: When Forecasting Viewperiods are Used.

Project Viewperiods

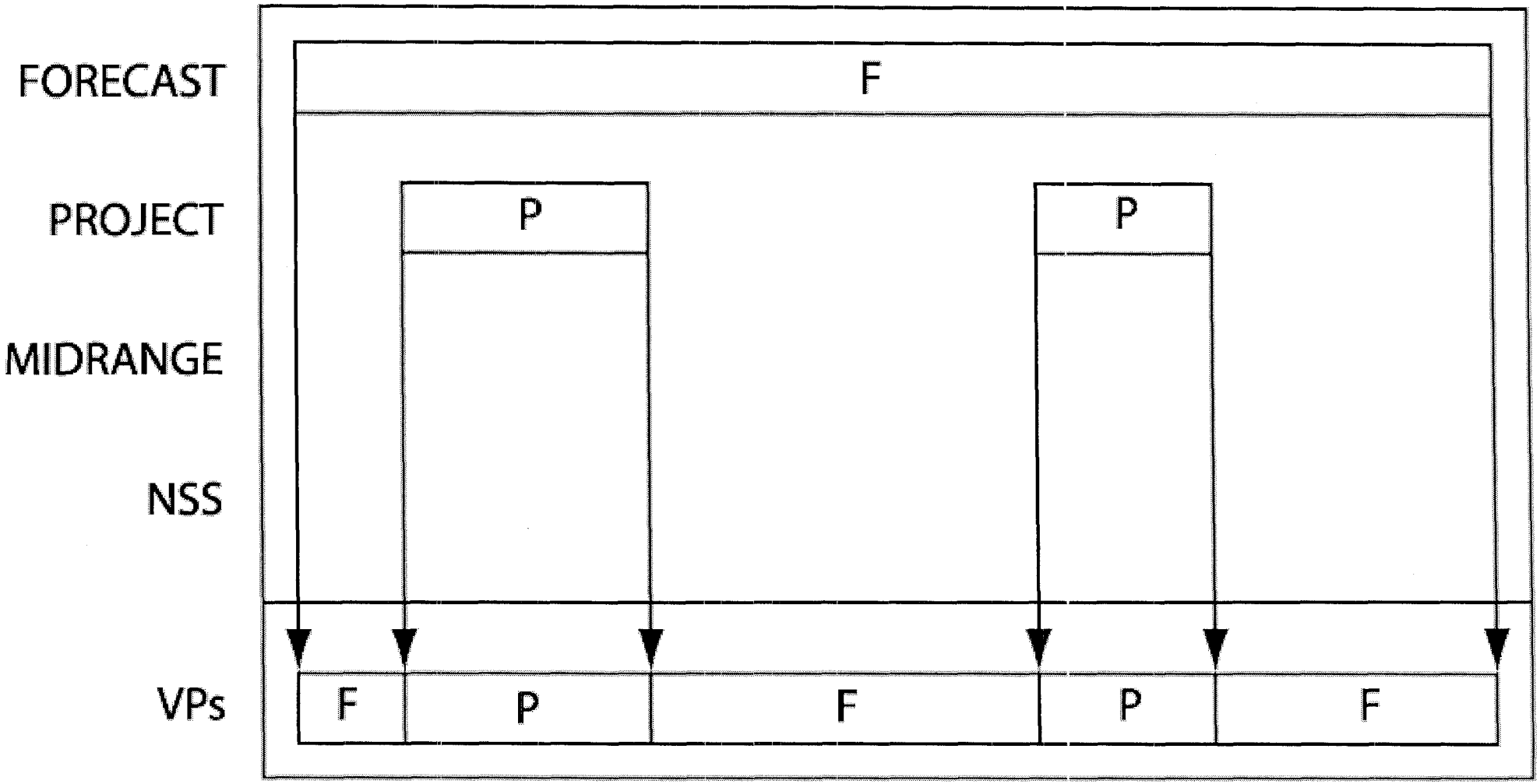


Figure 5: Project Viewperiods Take Precedence over Forecasting VP

Mid-Range Viewperiods

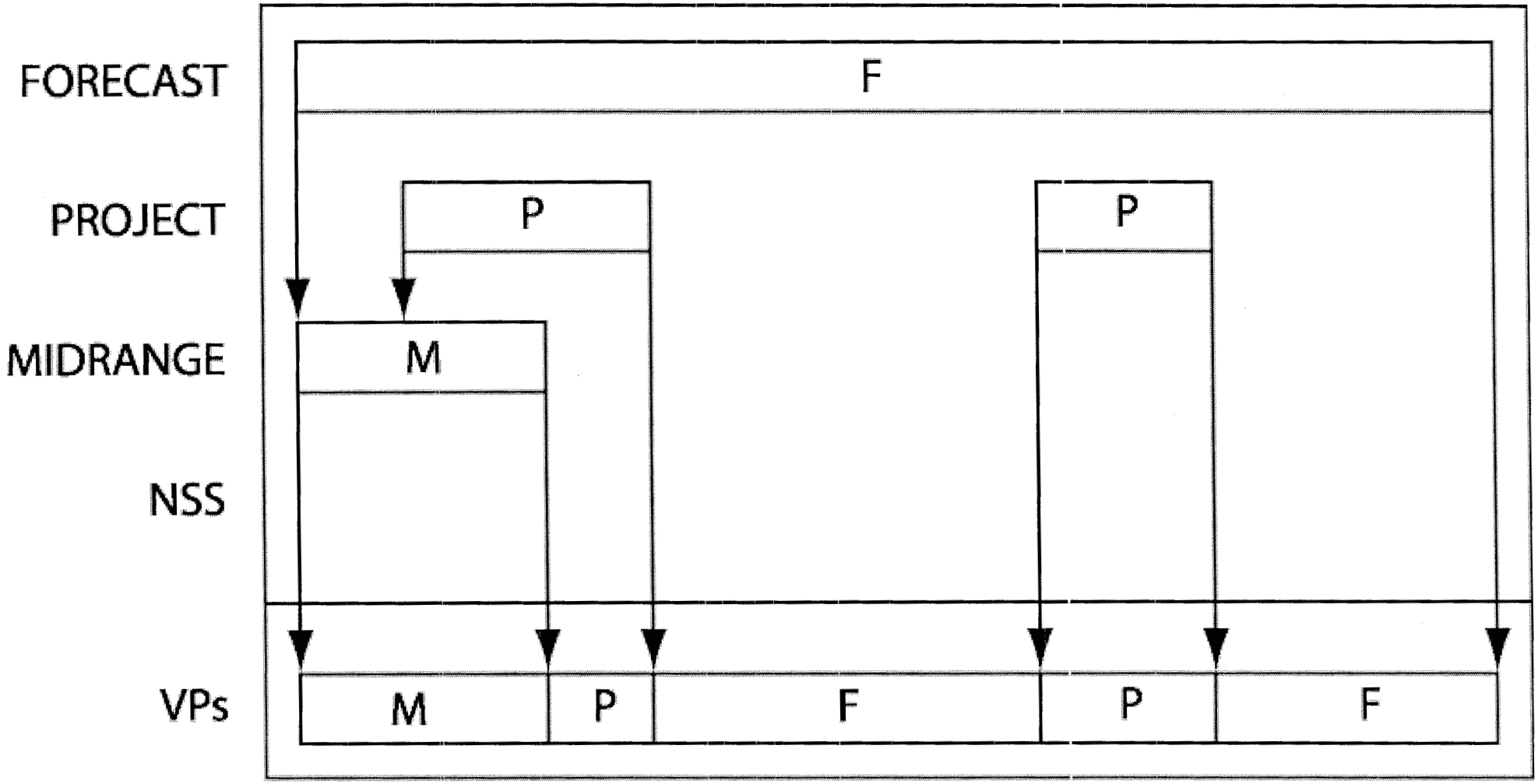


Figure 6: Illustration of Mid-Range Viewperiods.

NSS Viewperiods

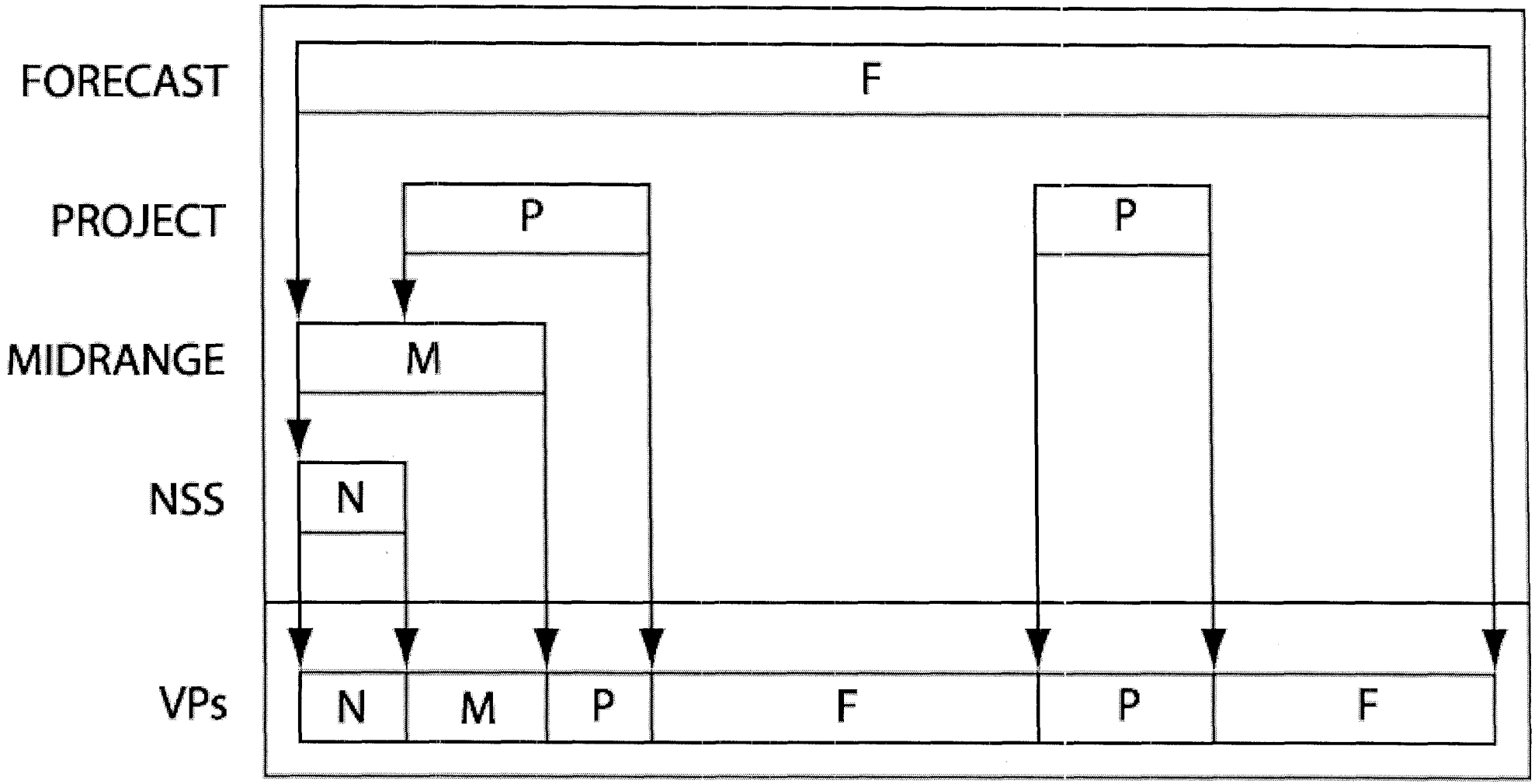


Figure 7: The Priority of NSS Viewperiods is ultimate.

When it is all put together